REF : PSER:PUR:TSX:042:061 **Date : 07/09/2006**

Sub : Tender document for **SUPPLY, INSTALLATION, COMMISSIONING, TRAINING & ACQUAINTANCE OF ONE NO. THREE PHASE POWER ANALYSER FOR TSX DEPARTMENT, KOLKATA**

Dear Sirs,

Sealed offers are invited by the undersigned on behalf of BHARAT HEAVY ELECTRICALS LIMITED for the subject job. Please find enclosed tender documents as per following details:

Tender document no: **PSER:PUR:TSX:042:061 Dated 07/09/2006** comprising of following :

Part – A (i) & (ii)	Pre-Qualification Criteria
Part – B (i) & (ii)	General Conditions of contract (GCC) & Special Conditions of Contract (SCC)
Part – C	Technical Specification
Part – D	Price Schedule
Part – E	No Deviation Format

1.0. Last date of submission of offer is 21/09/2006 (15-00 Hrs). Techno-commercial bid shall be opened at 14.00 hours of 23/09/2006.

2.0 The offers shall be sent in sealed envelopes in the manner prescribed below :

a) Cover - 1 : Containing 'Techno-commercial bid' superscribing "COVER-I, TECHNO-COMMERCIAL BID, Name of the Job , Tender document no and & due date", No Deviation Certificate Sealed and Signed.

b) Cover - 2 : Containing 'Price bid' superscribing "COVER-II, PRICE BID, **Name of the Job/item,** Tender document no and due date".

c) Cover - 3 : Containing documents in support of PQ criteria superscribing "COVER NO.-III, PRE-QUALIFICATION CRITERIA, **Name of the Job/ item,** Tender document no, and due date".

d) Cover No.-4 : Containing the above four sealed covers superscribing "COVER-IV, NAME OF THE JOB, TENDER DOCUMENT NO, DATE & DUE DATE OF SUBMISSION.

3.0 You are specifically requested to note the following and submit your complete offer as per following:

4.1 Cover letter to be placed in cover-I, indicating tender document no; name of the job; references of all subsequent correspondences in connection with the subject job, if any. Also Duly filled-in, signed and stamped on all pages of the following documents is to be placed in Cover-I of offer :

4.1.1 Techno-commercial offer - 2 copies (1 marked as 'original' and the other as 'copy').

4.1.2 Tender document details of this web pages - 1 copy (marked as 'original' and should be stamped & signed on all pages by authorized signatory of the bidder).

4.1.3. Price Schedule of tender document (**un-priced,** but indicating 'quoted/not quoted' as applicable) - 1 copy (marked as 'original').

4.1.4 2 (Two) copies of supporting / supplementary documents other than those already submitted elsewhere in this tender, containing all data sheets, annexures etc. (duly filled- in all respects), as applicable. Please mark enclosure no. / annexure no. corresponding to all enclosures in Cover-I of offer.

4.2 Duly filled in price schedule (Quoted rates) to be placed in Cover – II.

4.3 Documents in support of fulfillment of pre-qualification criteria to be placed in Cover–III.

5.0 BHEL reserves the right to accept or reject any or all offer without assigning any reasons thereof. BHEL also reserve the right to cancel the offer wholly or partly without assigning any reason thereof. BHEL also reserve the right to split the job.

6.0 You are free to visit the site and study the prevailing site condition including law & order etc. before quoting.

7.0 For any clarification on the tender document, you may seek the same in writing from the office of the undersigned. Such letters should reach the office of the under signed positively by **14/09/2006.**

8.0 BHEL **may** decide holding pre-bid conference (PBC) with any/ all the intending bidders. On such communication from BHEL, the bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL.

9.0. In the event of any conflict between requirement of any clause of this specification / documents / drawings / data sheets etc or requirements of different codes / standards, specified, the same to be brought to the knowledge of BHEL by you in writing for such clarifications before you submit your bid; otherwise, more stringent requirements as may be interpreted by BHEL shall prevail and shall be binding on you.

10.0 Price bids of those bidders will be opened who will be qualified for the subject job on the basis of evaluation of Techno-commercial bids / pre-qualifying criteria and as considered suitable by BHEL.

11.0 While BHEL reserves the right to open the price bid of the offers in camera, the date & time to open the tender opening shall be intimated to the bidders in case BHEL decides it to be 'Public opening' and in such a case, one authorized representative of the bidder shall be allowed to attend.

12.0 Entry tax (if applicable) shall be born by BHEL.

13.0 Earnest Monet Deposit (EMD) of Rs.25,000=00 either in cash deposited at BHEL office Cash section and receipt enclosed or in the form of crossed Demand Draft / Pay Order (in favour of Bharat Heavy Electricals Limited, payable at Kolkata), shall be enclosed by the bidder along with the offer, failing which the tender is liable for rejection.

One time EMD for Rs. 1,00,000.00 (Rupees One Lakh only) will also be valid for all such jobs. Bidders who have deposited one time EMD of Rs. 1.00 lakh with BHEL:PSER for such job (evidence of deposit must be submitted) will be exempted from submission of EMD with this tender. The followings may be noted:

In case the bidder deposits separate EMD as mentioned above , there will be no change in existing clauses of this tender.

In case of bidders having one time EMD ; one time EMD can not be used for SD purpose. In this case, 50% of security deposit can be deposited by the successful bidder in the form of BG within time specified in the letter of intent and balance 50% of SD shall be deducted from RA bills @ 10% of gross value of RA bills till the full security deposit is made up.

Bank Guarantee shall not be acceptable towards EMD. The EMD shall be enclosed with the Techno-Commercial Bid (Part-A).

14.0 **Security Deposit (SD) Bank Guarantee** : The successful tenderer should furnish a security deposit or bank guarantee from Bank for an amount of 10% of the total value of the order in the form and manner desired by us (as per format) for the satisfactory execution of the same in accordance with the terms and conditions and delivery specified in the order, within 15 days from the date of L.O.I. This BG should remain valid till the date of successful commissioning of the equipment.

15.0 **Performance Bank Guarantee (PBG) :** The successful tenderer should furnish a performance bank guarantee prior to commissioning of the equipment for an amount of 10% of the total order value valid till completion of the guarantee period. SD - BG may be converted into PBG.

All the bidders are requested to note that all the errata / technical clarifications / corrigendum / extension etc shall be published in this web page only. As such, all the bidders are requested to be in continuous touch with this web page.

Thanking you,

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LTD

Manager (Purchase)

PART–A :

PRE-QUALIFICATION CRITERIA FOR PARTICIPATING IN TENDER BID FOR SUPPLY, INSTALLATION, COMMISSIONING, TRAINING & ACQUAINTANCE OF ONE NO. THREE PHASE POWER ANALYSER.

- BIDDER SHALL **EITHER** BE AN **ORIGINAL EQUIPMENT MANUFACTURER (OEM)** OR AUTHORIZED REPRESENTATIVE OF OEM.

- BIDDER SHALL HAVE SERVICING NETWORK WITH REPAIR CENTRE IN INDIA.

- BIDDER SHOULD HAVE AN AVERAGE ANNUAL FINANCIAL TURNOVER DURING THE LAST THREE YEARS, ENDING 31ST MARCH'05 SHOULD BE AT LEAST 13 Lac, AND SHOULD SUBMIT THEIR AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT IN SUPPORT OF THE SAME.

NOTE:

THE BIDDER WHO MEETS THE ABOVE PRE-QUALIFICATION CRITERIA CAN ONLY PARTICIPATE IN THE SUBJECT TENDER.

BHEL RESERVE THE RIGHT TO ACCEPT / CANCEL ANY OR ALL THE OFFERS WITHOUT ASSIGNING ANY REASON THEREOF. BHEL ALSO RESERVES THE RIGHT TO CANCEL THE TENDER WITHOUT ASSIGNING ANY REASON WHATSOEVER.

BIDDERS QUOTING IN INDIAN CURRENCY (INR) ONLY SHALL BE QUALIFIED

PART – B (I) : GENERAL CONDITIONS OF CONTRACT (GCC)

SL. NO.	BHEL STANDARD TERMS	Supplier confirmation
01	Our requirement is for capital use and **will be used at PSER : KOLKATA OFFICE**. Offers are invited to submit in two-parts. **Part-I : TECHNICAL-CUM-COMMERCIAL AND UN PRICED BID** : Consisting of complete technical details, catalogues, drawings and all commercial terms. (Money values shall not be indicated i.e. un price bid). Following formats are to be filled and submitted in a single cover super scribing as Technical - cum - Commercial and Un Priced Bid, Tender Enquiry No. and Due Date. (i) Technical Specification (Catalogues to be enclosed if any) (ii) BHEL Standard Terms & Conditions. (iii) Un Price Bid (iv) Confirmation of pre-qualification criteria **(to be downloaded from our BHEL Web Site i.e. www.bhel.com or www.jantermanter.com)**. **Part-II : PRICE BID** Price to be indicated in the format enclosed. (Any preconditions for price will not be accepted and the tender will be rejected). The Technical -Cum-Commercial offer will be opened first, discussed, finalized and only then the price bid of technically acceptable offers will be opened. Tenders will be received up to 15.00 Hours on the said due date. **Offers should be submitted in Duplicate.** **If the vendor submits offer i.e. Technical & Price bid together in single envelope, the offer will be rejected.**	
02	If any vendor sought to quote through their agents "They have to inform to BHEL in advance, before opening date. Other wise the offer will be treated as Unsolicited Offer and same will not be opened".	
03	BHEL keeps its right to **reject / load** any offer which is having deviations to BHEL Specifications, Standard Terms & Conditions. All the bidders shall submit their offers only by filling the original BHEL tender documents. No other offer will be entertained. In case of Technical-Cum-Commercial bid, copy of the price bid has to be used to indicate commercial terms without price.	
04	The equipment offered shall be strictly conforming to the specification and for complete unit.	
05	No offer for individual accessories or part machinery will be accepted.	

SL. NO.	BHEL STANDARD TERMS	Supplier confirmation
06	**Terms of payment** : a. 90% within 30 days on submission of invoice along with materials receipted challan. b. 10% within 30 days ON successful completion of training, certified by TSX department of PSER:HQ & on submission of 10% PBG. **c.** ***No advance shall be paid. Payment shall be paid in INR only.***	
07	**Warranty** : Warranty will be for engineering, materials used, design and stipulated performance of the equipment supplied and will remain valid for a period of 12 months from the date of installation/ commissioning. In case of any defect arising out of above, supplier shall replenish the component / assembly, free of cost.	
08	**Delivery** : We expect delivery of the MMD equipment within 08 Weeks from placement of P.O., however, bidder to submit exact delivery period in techno-commercial bid as it attracts penalty / LD.	
09 (i) (ii)	**TERMINATION CLAUSES**: BHEL has a right to cancel the order for delay in supply beyond penalty period without any monetary or legal obligations. Obtaining the Export / Import License, if any required is the responsibility of the supplier. In case of delay in supplying the equipment in time, due to this reason, BHEL has a right to cancel the order without any monetary / legal obligation. To this extent supplier has to give the confirmation.	
10	**Liquidated Damage (LD) :** It is clearly understood among the parties to the contract that the delivery of the goods specified in the purchase order should be made within the time limit prescribed. Where the seller supplies or dispatches the goods beyond the delivery period specified, the purchaser will have no obligation to accept the goods. If accepted liquidated damages at the rate of **½% (half percent) of the value of goods (Basic price) in arrears per week at the discretion of the purchaser, subject to a maximum of 10% (ten percent) of basic price,** will be levied without prejudice to any other relief or compensation due to the purchase under any other condition to the contract.	
11	The sealed tenders superscribing tender number and due date should be **addressed to** MANAGER / PUR, Bharat Heavy Electricals Limited, PSER, DJ-9/1, SALT LAKE. SECTOR-II, KOLKATA - 700 091, India.	
12	**Inspection** : BHEL will have the option to inspect with conducting of Load/Overload Test etc. the equipment at supplier's works before delivery. The final inspection / performance checking will however be carried out at our site. Bidder must submit quality plan within one month from the date of LOI / PO, to BHEL for its approval.	
13	Supplier must submit with their offer **list of customers** (with their full address and their purchase reference number) to whom they have supplied similar machine in the past five years. The year of supply should also be indicated.	

SL. NO.	BHEL STANDARD TERMS	Supplier confirmation
14	The quotation should be **valid at least for a period of 90 days** from the tender due date of submission (extended, if any). Price Variation Clause will not be entertained	
15	**Force Majeure :** The vendor shall be subject to force majeure clause defined as under : This force majeure is herein defined as any cause which is beyond the control of the tenderer which they would not have foreseen or with a reasonable amount of diligence could not have foreseen and which subsequently affect the performance of the contract such as SRCC (strike riot and civil commotion), earthquake, flood, acts of god, acts of any government, domestic or foreign including but not limited to war. The tenderer shall not be liable for delay in performing his obligation resulting from any force majeure clause as referred to and/or defined above. The date of completion will be subject to hereinafter provided be extended by a reasonable time even though such cause may occur after tenderer's performance of his obligation has been delayed for other causes.	
16	**Arbitration :** In the event of any dispute or difference arising between the parties to this contract regarding execution of the same or their respective rights and liabilities there under, the same shall except as otherwise expressly provided therein, be referred to the arbitration of sole arbitration of General Manager, BHEL, PSER, Kolkata or any other person nominated by him and provisions of the "The Arbitration and Conciliation Act ,1996" of India or any statutory notification or re-enactment therefore and rules framed there under from time to time shall apply to such arbitrations. The decision of arbitrator shall be binding both on seller and purchaser. The venue of arbitration shall invariably be Kolkata, India.	
17	**Jurisdiction :** All disputes or differences arising under out of or in connection with the purchase order shall be subject to the exclusive jurisdiction of court at Kolkata.	
18	**Risk Purchase :** Alternatively, the purchaser at his option, will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. The seller shall be liable for any loss which the purchaser may sustain by reason of such risk purchase in addition of LD at the rate mentioned in LD clause.	

SL. NO.	BHEL STANDARD TERMS	Supplier confirmation
19	**General :** i) The **Consignee** for the equipment will be " **AGM/TSX, BHEL BHAWAN, SALT LAKE CITY, BHEL:PSER:KOLKATA** ii) All documents / correspondences must bear the Tender no. / Purchase Order No. & Date.	
20	The **purchase preference** to Govt. undertakings shall be given as per the guide lines of Government of India.	
21	Bank Guarantee : Non submission of 10% BG will attract 10% loading on the offers.	
22	**Penalty Clause** : Non acceptance of penalty clause will attract maximum 10% loading on the offer and accordingly proportionate percentage will be loaded for accepting less percentage of penalty clause. Ex : If the supplier has accepted for maximum 5% penalty clause, then balance 5% will be loaded.	
23	For all other Terms & Conditions, if the offer is not confirming to the same, BHEL at its discretion shall load the same and the loading pattern shall be intimated to the bidders before price bid opening. However BHEL reserves the right to cancel a bid in case of non-acceptance of any terms and conditions finally arrived before price bid opening.	
	Note : The offers not complying the above Terms & Conditions will not be accepted.	

Note :

01. In case of any conflict / inconsistency in any clause of the tender or between various sections of the tender, bidder should bring the same in writing to BHEL for clarification before submission of the bid, failing which the most stringent interpretation of the clause in favour of BHEL shall be adopted and the same shall be binding to the bidder.
02. Any deviation sought by the bidder should be indicated in the techno-commercial offer.
03. **Bidder should write “accepted” in the column “supplier confirmation” for each clause.**

PART – B (II) :

SPECIAL TERMS AND CONDITIONS FOR MMD's (THREE PHASE POWER ANALYSER)

The following items to be furnished /Supplied/Confirmed by the Vendor at the time of delivery of the above instruments.

CERTIFICATES:-

The Vendor Shall provide

- Valid Calibration Certificate/Test Certificate from the OEM showing the test results/calibration results.
- Operation Manual:- To be provided by Supplier/OEM in original (OEM COPY).
- Warranty /Guarantee Certificate:- To be provided by the Supplier/OEM.(12 Months)
- Certificate of NEWNESS to be provided by Supplier/OEM

ACCESSORIES:-

All necessary probes, accessories, CD's , RS 232 Interface facility (IF Any) to be supplied with the equipment.

INSPECTION - DEMONSTRATION & Training :-

To be done at BHEL-PSER (HQ)/C& I Lab/ Manohar Pukur-BHEL Guest House in presence of BHEL's Engineer and Vendor's representative .

SCOPE:

- Supply
- Installation
- Inspection
- Demonstration
- Training for Two days

DELIVERY PERIOD:

- **Within 8(Eight) Weeks**

DELIVERY:-

BHEL-PSER (HQ)/C& I Lab/ Manohar Pukur-BHEL Guest Hous

PART – C:

(TECHNICAL SPECIFICATION)
THREE PHASE POWER ANALYSER

FEATURES:

- Analyzer should have 4 voltage and 4 current inputs (for 3 phases and neutral)
- Analyzer should measure Vrms, Arms, Hz, W, VAR, VA, PF Cos φ (DPF), Crest Factors, Harmonics and THD (V, A, W)
- It should measure kWh and kVARh, kVAh, demand interval
- Analyzer should have Recorder and Auto Trend feature
- Analyzer should have System monitor function
- Phase diagrams mode should be available
- Recording of Dips and Swells / Half cycle based should be available
- Standard safety compliant
- Analyzer should have minimum 50 screen and 10 data memories
- Analyzer should be supplied with PC interface software and interface cable

TECHNICAL SPECIFICATIONS:

FUNCTION	SPECIFICATIONS
Voltage inputs	
Number of inputs	4 (3 phases + neutral)
Maximum input voltage	1000Vrms
Maximum peak voltage	5 KV
Bandwidth	Minimum 50 Hz
Scaling	1:1, 10:1, 100:1, 1000:1 and variable
Current inputs	
Number of inputs	4 (3 phases + neutral)
Type	Clam on current transformer with mV output
Range	0.1 to 3000 Arms
Bandwidth	Min 50Hz
Scaling	0.1, 1, 10, 100, 1000mV/A and variable
Nominal frequency	40 to 70 Hz
Display mode	
Waveform display	It should display up to 10/12 times horizontal zoom should be available.
Phasor	It should show real time phasor diagram
Bargraph	Should be available in Harmonics and

	Monitor mode
Eventlist	Should be available in Dips & Swells and Monitor mode
Measurement modes	
Scope	Vrms, Arms
Volts/Amps/Hz	Vrms, Vpk, V Crest Factor, Arms, Apk, A Crest Factor, Hz
Dips and Swells	Vrms, Arms Should capture up to 1000 events with date, time, duration, magnitude and phase identifications with programmable threshold
Harmonics DC, 1 to 50	Harmonic Volts, THD Volt, Harmonic Amps, THD Amps, K Amps, Harmonic Watts.
Power and Energy	Watts, VA, VAR, Power Factor, Cosφ , Arms, Vrms, kWh, kVAh, kVARh, peak demand interval .
System monitor	Vrms, Arms, Harmonic Volts, THD Volts, Plt, Vrms1/2, Arms1/2, Vneg, Hz, Dips and swells, unbalance. All parameters should be measured simultaneously
Accuracy, resolution and range	
Volt / Amps / Hertz	
Vrms (AC + DC)	1 to 1000 Vrms, ±0.5% of nominal voltage
CFV	1.0 to >2.8
Arms (AC + DC)	0 to 20,00 Arms, ± 1% of reading ± 5 counts
CFA	1 to 2
50 Hz nominal	42.50 to 57.50 Hz, ± 0.1% of nominal frequency
Dips and swells	
Vrms	0.0 to 100% of nominal voltage, ± 1% of nominal voltage
Arms	0 to 20,000 Arms, ± 1% of reading ± 5 counts
Threshold levels	Programmable in percent of nominal voltage
Duration	hhh, mm, ss, mmm with half-cycle time resolution
Harmonics	
Harmonic selection	Dc, 1 to 50
THD	0.0 to 100.0%
Hz	0 to 2500 Hz (Min)
Phase angle	-360° to +360°
Power and Energy	
Watt	1.0 W to 20.00 MW, ±1.5% of reading ± 10 counts
VA	1.0 VA to 20.00 MVA, ±1.5% of reading ± 10 counts

VAR	1.0 VAR to 20.00 MVAR, ±1.5% of reading ± 10 counts
KWh	00.00 kWhr to 200.0 GWhr, ±1.5% of reading ± 10 counts
KVA	00.00 kVAhr to 200.0 GVAhr, ±1.5% of reading ± 10 counts
KVAR	00.00 kVARhr to 200.0 GVARhr, ±1.5% of reading ± 10 counts
Power Factor	0 to 1, ±0.03%
Cosϕ / DPF	0 to 1, ±0.03%
Monitor mode	
Sampling	Combination of 5 readings/sec and 100/120 readings/sec continuous sampling per channel depending on the parameter measured
Recording time	Up to 1 weeks with 10 min resolution
Memory	1008 min, max and avg points for each reading
Limits	According to EN50160 or user definable
General	
Case	Rugged, shock proof with integrated protective holster
Drip and dust proof	IP51 according to IEC60529
Display	
Type	Bright LCD with backlight
Size	Portable and handy (Size to be mentioned)
Resolution	320 x 240 pixel
Contrast and brightness	User adjustable, temperature compensated
Memory	
screens	50 screen memories
Data	10 data memories for storing data including recording
Real-time clock	Time and date stamp for Autotrend, Transient display and System Monitor
Weight	Not More Than 2 .5 Kg
Power	
Line power	230 V adapter
Battery power	Rechargeable NiMH
Battery operating time	> 7 hours
Battery charging time	4 hours
Safety	
Compliance	Standard Safety & CE
Max voltage on current BNC input	42 Vpeak
Operating temperature	0ºC to +50ºC
Included Accessories	Main Instrument Hard carrying case 4 current clamps, 400A AC 4 test leads, 4 alligator clips Battery charger / Eliminator PC software

	Optical cable for USB User manual on CD-ROM
Warranty	1 year for main instruments, one year for supplied accessories

Note: Authorization Certificate from Original Manufacturer should be enclosed along with the offer

NB:- Offered Model must have technical Comparison with BHEL Specification in tabular form

PART – D

PRICE SCHEDULE FORMAT FOR **THREE PHASE POWER ANALYSER.**

A) <u>EQUIPMENT PRICE</u>

01. Basic price :

02. Packing & forwarding charges :

03. Excise Duty (@ _____ %) of basic price :

04. Sales Tax / VAT (@ _____ %) of basic price :
(VAT REGISTRATION NO.)

05. Transit Insurance Charges :

06. Any other charges :

07. **TOTAL PRICE (FOR BHEL/KOLKATA OFFICE)** (Summation of 01 to 06)

SL	**DESCRIPTION**	**QTY**		
			UNIT PRICE FOR BHEL/KOLKATA OFFICE (all inclusive)	**TOTAL PRICE**
1	**THREE PHASE POWER ANALYSER**	**02 Nos.**		

Total price for **THREE PHASE POWER ANALYSER** including freight charge for **EHQ/ KOLKATA *:Rs.***

(Rupees……..)

Signature of the bidder with seal & date

Signature of the bidder with seal & date

PART-E

NO DEVIATION CERTIFICATE

REF: ENQUIRY NO. PSER:PUR:TSX:042:061 Dated 07/09/2006

Certified that we have gone through each and every terms and conditions mentioned in the enquiry (Terms and conditions) and offer our unqualified acceptance of the same.

It is also confirmed that the price has been quoted in the format received with the enquiry.

Any deviation found subsequently at any time during execution of order shall be treated null and void.

(Signature of bidder)
with Seal